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16/9/46

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No.F.29(12)-I.A/39.

A copy of the undermentioned papers is forwarded to the

Hon'ble the Resident at Hyderabad,
Hon'ble the Resident in Mysore,
Hon'ble the Resident for Central India,
Hon'ble the Resident for Rajputana,

for information.

OFFICE OF THE
RESIDENT
BANGALORE.
File No. 2112

By order, etc.,

for Secretary to His Excellency
the Crown Representative.

Political Department,
New Delhi.
The 15th March 1939.

Filed
P.M.R
7/4/39

Letter from the Secretary to the Inter-Provincial Board for Anglo-Indian and European Education, No.529/24-38, dated the 23rd February 1939, with enclosures.

Copy of a letter No.529/24-38, dated the 23rd February 1939 from the Secretary to the Inter-Provincial Board for Anglo-Indian and European Education to the Secretary to His Excellency the Crown Representative (Political Department), New Delhi.

Subject:- Arithmetic-Music-Teaching-European Schools.

I am directed to send herewith, for information, 5 copies of the following Notes which have been prepared under the authority of the Inter-Provincial Board for Anglo-Indian and European Education.-

1. Note on the Primary Course in Arithmetic in European Schools.
2. Note on the Teaching of Music in European Schools.

2. I am to add that sufficient copies of these Notes have already been supplied to the Inspector of Schools, Coorg and Bangalore, Bangalore, for distribution to Anglo-Indian and European schools within his jurisdiction.

TER-PROVINCIAL BOARD FOR ANGLO-INDIAN AND EUROPEAN EDUCATION.

The Primary Course in Arithmetic in European Schools.

I

INTRODUCTION.

This Note is issued by a Sub-Committee of the Inter-Provincial Board for Anglo-Indian and European Education which met in Calcutta on February 9th in pursuance of the following resolution passed by the Board on the previous day :—

> *That a sub-committee be formed to consider the scope and the nature of the recommendations, if any, which should be made in connection with (a) the content of, (b) the standards of attainment in, the Primary course in European schools.*

2. The Sub-Committee consisted of the following gentlemen :—

1. R. C. Busher, Esq., M.A., (United Provinces),
2. E. Hudson-Davies, Esq., B.A., Inspector of European Schools, Bombay,
3. Dr. V. S. Jha, B.A., Inspector of European Schools, Central Provinces,
4. Rev. D. T. Roberts, M.A., L.C.P., (Orissa),
5. H. F. Saunders, Esq., M.A., I.E.S.; Inspector of European Schools, Madras,
6. Dr. H. Thomas, M.A., Inspector of European Schools, Bengal,
7. M. S. H. Thompson, Esq., B.A., I.E.S., Inspector of Schools, Coorg and Bangalore,

and the Secretary of the Board.

3. The Sub-Committee considered that in Arithmetic in particular it was desirable to suggest a standard of attainment to be reached at the end of the Primary course (standard IV). Children who join the Vth standard of a European High School, after having attended a Primary School, not infrequently find themselves below the standard expected of them in Mathematics. In some areas the 'gap' is negligible ; in others it may be so serious as to delay the child for a year. The heads of many High Schools (usually hill schools) complain that the children coming to them from the Primary Schools are ill-prepared in Mathematics. On the other hand the heads of some of the Primary Schools (not by any means inefficient ones) consider that the demands of the High Schools are unreasonably severe in this matter, and that some of the sections of the subject expected to be known on entry to the fifth class of a High School do not rightly belong to a Primary School curriculum. Other Primary School heads, working perhaps on a departmental syllabus, have asked to be allowed to extend the scope of their work in Mathematics so that their children, on passing into a High School, may not be handicapped.

4. It may be added that it is not only between Primary Schools and the Primary sections of High Schools that the difference of standard lies. The Mathematics courses of the High Schools differ considerably among themselves. In some schools, for example, formal Algebra is begun in standard III, in others in standard V, and there is a variation of four years (standards III-VI) in the stages at which the formal proofs of Geometrical Theorems are introduced in various schools.

5. The following suggestions are issued with the intention of reconciling these differences, and in the hope that the paths of a good many children may be made smoother by the adoption, by general consent, at this one point in the school course, of a common halting place.

6. It is unquestionably undesirable to indicate on the time-table or otherwise any definite sub-division of Mathematics into Arithmetic, Algebra, and Geometry, in the Primary school. On the other hand Mathematics may rightly be held to include, in the higher classes of the primary stage, those extensions of the subject which form the bases of formal Algebra, and also a preliminary introduction to the properties of the simpler geometrical figures. The word "Arithmetic" in the title of this Note is therefore to be regarded as having this wider

connotation. It may be added that most of the topics discussed are to be found in some of the better Primary School "Arithmetic" Series now on the market.

7. The scope of the work suggested is wider than that of some schools, more restricted than that in others. Further, the aim of this Note is twofold, namely, on the one hand, to suggest for study only those topics which have some relation to what is familiar to the child or which are in themselves of interest to a young mind; and, on the other, to have regard for the foundations of the work which is to follow in the higher classes. It will, as a consequence, be found that while some branches of the subject traditionally included in the Primary course in the European schools have been omitted, additional topics have been included in their place; but the total bulk of the work should not differ greatly from that normally undertaken in an average school.

8. It is necessary to make one point clear. The suggestions which follow are not a syllabus. The committee were not authorised to prepare a "common syllabus". Two things follow from this. Firstly, the list of topics given is not exhaustive. It was not considered necessary to make specific mention of the fundamental parts of the subject, *e.g.*, numeration and notation, a knowledge of which is, of course, implied by the actual mention of "the four rules". Secondly, the order of the topics is arbitrary. The main intention is to encourage agreement as to the mathematical knowledge expected of a child on entering Standard V, for it is at this point that the majority of transfers occur. The construction of a syllabus on these agreed topics, and the treatment of the various elaborations and problems usually associated with them, are matters which may be left to individual schools so as to allow full scope for personal preferences in the treatment of the subject matter.

9. The first draft of this Note was prepared by the Secretary of the Inter-Provincial Board and then submitted for comment to members of the Sub-Committee. The Note in its present form represents the views of a majority of the Committee and is, at most points, a unanimous expression of opinion.

10. Some of the views of individual members of the Committee are included at appropriate places in the Note. Certain members of the Committee put forward suggestions bearing on the teaching of Arithmetic in the Primary school

which, though not falling within the terms of reference of the Committee, are valuable and suggestive and have therefore been included, in some cases by direct quotation, in three Appendices. One concerns methods, a matter with which a co-ordinating Committee is closely concerned, the second contains a short bibliography of the subject, and the third gives certain interesting and instructive results obtained from the answers of a group of children in European schools in India to Ballard's standardised Test in Mechanical Arithmetic.

11. On one question—that concerning the teaching of the English coinage in the Primary School—the Committee are almost equally divided. Some members hold that sums involving the English coinage should not be taught at all at this stage. It involves, they maintain, the teaching of two different monetary systems side by side and is bound to cause confusion in the minds of some of the pupils. Children in this country, moreover, have no first hand acquaintance with English coins or with any transactions in the English money system. Sums involving pounds, shillings, and pence, are purely academic exercises and, as such, have no place in the Primary course. The necessary knowledge and manipulation of this coinage can readily be acquired at a later stage, if required for examination purposes or simply as general knowledge. On the other hand there are schools, especially hill schools, which contain a number of children who will finish their education in England. For these a grounding in the English system seems essential. One member of the Sub-Committee suggests that English money sums should not be taught before standard IV, and that the teaching in that standard should be optional. Another, while opposing the wholesale omission of the English coinage, agrees that there should be no mention of florins or half crowns. To this view the Sub-Committee as a whole would certainly agree, and would, no doubt, add to these two names, guineas and four penny pieces! The Sub-Committee are therefore unable to make a general recommendation on this matter, but place their views before schools who will, it is hoped, give them due consideration and decide the question for themselves having regard to their own particular circumstances. This topic has therefore been omitted from the suggestions which follow.

12. One further point may be mentioned here. "To enumerate the parts of Arithmetic which ought to be known by pupils who have passed normally through the Junior (*i.e.*, Primary) School may seem at first sight a definite enough

task, but some ambiguity may arise in the interpretation of the word 'know'. It is necessary to discriminate between what has been taught exhaustively and what has been merely broached, and again between what may be known well enough at the time of the lesson and what has become a permanent possession. A boy who learns a poem in January may perhaps know it in February, but will almost certainly have forgotten it by July unless the knowledge has been 'kept alive' by some means or other. Similarly a boy who can repeat the multiplication tables faultlessly at the age of 8 years may find a difficulty in using them readily in his multiplication sums at the age of 11 years unless sufficient repetition and practice have been provided during the interval. In Mathematics, more perhaps than in any other subject, to have forgotten the elements is fatal to further progress, and lack of mastery may lead to a permanent distaste for the subject. A class which has forgotten something is often called stupid when really the pupils have been normal and the school has been at fault in not ensuring that fundamental facts have been thoroughly learnt and revised. What is required is automatic availability of the number facts which have been dealt with, for example the power of recalling instantly that 'Seven nines make sixty three' without going through the whole 'nine times table', or of taking 18 from 23 without resorting to processes such as counting up or dissection.

"The result of the teaching of Arithmetic in the Junior School will therefore be on the one hand to secure that a certain body of knowledge is thoroughly and permanently known, and on the other to introduce certain notions and processes which will be further developed in the Senior School"[1].

13. Those topics in the following Note which, it is suggested, might be introduced but not "taught exhaustively" are indicated by an asterisk.

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[1] *Senior School Mathematics.* Board of Education Educational Pamphlets No. 101, Paras 14-15.

II.

SUGGESTIONS.

14. A mere statement will suffice to indicate some of the topics which should have been thoroughly mastered[1] by the end of the IVth standard, *viz*:—

The four rules applied to whole numbers.

Tables of Indian coinage; seers and maunds.

English measures of length, time, weight and capacity.

Addition, subtraction, short multiplication and division, of Indian coinage and weights, and of English measures of length, time, weight and capacity.

Reduction.

The four rules applied to simple fractional numbers; equivalent fractions.

Simple 'Method of Unity'.

Simple tests of divisibility.

15. Some schools which cater for poorer and duller children might perhaps consider it desirable to adopt a suggestion of the Board of Education[2] that the Primary course should not include long multiplication and division of money, weights, and measures, and that "exercises in weights and measures might well be confined to three-unit quantities, and fractions to simple denominators that will not involve teaching the rules for H.C.F. and L.C.M". All schools might perhaps agree to limit the multipliers and divisors in money sums to numbers which can be factorised so that only short multiplication and division are required[3]. Practice might be introduced as an alternative method of multiplication; but here the *method* will be demonstrated without introducing the more complicated processes, *i.e.*, only the simpler multipliers will be used. The following are therefore asterisked (*vide* para 13) to indicate an introductory treatment only.

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1. *Vide* Appendix A.

2. *Handbook of Suggestions (1937)*, page 526.

3. One member of the Sub-Committee writes, "Some work in long multiplication and division of money, I think, is desirable. Multipliers and divisors like 17, 19, 23, may be included. Otherwise, the applicative side of this part of the subject is too cramped and the pupils irked by continued repetition of the smaller numbers".

***Long Multiplication and Division of money, weights, etc.**

***Simple Practice methods.**

It will be generally agreed that the day of the simplification of cumbersome fractions is past.

16. The **decimal notation** will of course be learnt in the Primary School and the **relation between decimal and vulgar fractions** studied, and also the **addition and subtraction of decimal fractions.** The practice in regard to the multiplication and division of decimals by decimals varies. In some schools this is taught in standard III; in others, no examples are taught before standard V. Not unnaturally, all the various ways of multiplying and dividing decimals are to be found in the different schools. It is, however, very confusing for a child to meet, early in the school course, a method of doing a particular kind of sum different from that to which he is accustomed. In view of the difference in the methods applied to this part of the subject it is suggested that only the **multiplication and division of decimals by whole numbers up to 12, and by the multiples of 10** should be taught in the Primary course; and that the multiplication and division of a decimal by larger numbers and by other decimal numbers should be left until standard V, *i.e.*, after the majority of school transfers have taken place[1].

17. The children will have become familiar from their rulers with centimetres and millimetres, and it is suggested that examples involving **the metre and its sub-divisions,** should be given as this is so closely connected with fractional (vulgar and decimal) work. But the metric tables as a whole need not be taught.

18. In European schools in India **percentages** and ***averages** rarely find a place in the Primary course. But the simple treatment of both topics seems within the powers of Primary School children and might well be taught. The meaning of percentage follows closely on the work in fractions. It is suggested that the work in this subject should be limited to an understanding of the meaning of the term

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1. One member of the Sub-Committee, while agreeing that there is much to be said for this recommendation, considers that if decimals were "properly taught" at the beginning, it should be possible to get further than this (*Vide* Appendices A and C).

* *Vide* para 13.

'percentage', the conversion of a percentage into a vulgar and a decimal fraction[1], and the application of percentage calculations to simple and familiar situations, *e.g.*, to find the percentage of children absent from a class, the percentage of boys in a mixed school, or the percentage of failures in an examination. Similarly, finding average attendances, weights, ages, etc., would interest the children and would give little difficulty.

19. Mensuration often, but not always, forms part of the Primary School Arithmetic course. Most children are taught **to draw and measure lines, to use the ruler, set square, and compasses, and to construct rectangles and circles of given dimensions. The construction of triangles** (with the use of the protractor if necessary) from given data might also be taught. The children could also usefully learn the **simple geometrical nomenclature**, *e.g.*, the names of the different kinds of angles and triangles and the parts of the circle.

20. ***Square Measure** is, not infrequently, entirely omitted. But the subject is so essentially simple and lends itself so readily to practical demonstration[2] and familiar application that it seems most desirable to teach, at any rate, the simpler parts of the table, and the calculation of areas of rectangular surfaces. The ***simple mensuration of cuboids** might also be included in this section of the course.

21. The ***drawing of plans (of the school room etc.,) to scale, the use of squared paper and the construction of charts and graphs** (*e.g.*, weather records) are all of interest and should find a place in the course at this stage[3].

22. It is beyond question that the formal proofs of Geometrical Theorems are out of place in the Primary course and a knowledge of any such proofs should not be expected on entry to standard V. The ***practical demonstration and intuitive deduction of some of the early theorems** is valuable and the children should, it is suggested, be taught **how to bisect lines, angles, and arcs.**

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[1] One member of the Committee suggests that the only percentages used should be those which are convertible into, and easily demonstrable as, familiar fractions, *e.g.*, 25% but not 33⅓%.

[2] *Vide* Appendix A.

[3] For the brighter children easy functional graphs (*e.g.*, "ready reckoner" graphs) might be included.

Vide para 13.

23. There is little to justify the teaching of any Algebra by the traditional methods of approach in the Primary School. Nothing could be of less intrinsic interest (however much skill may be acquired in working them) than the familiar series of exercises beginning with substitution, and proceeding to the "Four Rules", "as far as brackets". It is now generally agreed that the approach to Algebra should be by "Formulæ" and "Equations", the mechanical difficulties of manipulation being attacked and solved as they arise. The ***construction of very easy formulæ** as generalised statements of facts either known or given, and the ***solution of easy equations** (as "missing number" problems) could therefore, it is suggested, be included in the Primary course as an interesting introduction to the more academic manipulations of the later Algebra course.

24. It is suggested that care should be taken not to introduce formulæ beyond the comprehension of the children, *e.g.*, the formula for the total wall surface of a room could be built up, but not that for the surface of a cylinder[1].

25. For convenience, a list of the topics suggested above is given below:—

The four rules applied to whole numbers.

Tables of Indian coinage; seers and maunds.

English measures of length, time, weight, and capacity.

Addition, subtraction, short multiplication and division of the above units.

Reduction.

The four rules applied to simple fractional numbers; equivalent fractions.

Simple Method of Unity.

Simple tests of divisibility.

***Long multiplication and division of money, weights etc.**

But the earliest examples will be very much simpler than this; *e.g.*, the number of annas, pies, in R rupees; *or* a boy's weekly pocket money if he has as many annas as his age in years with two annas extra.

[1] *Vide* Para 13.

*Simple Practice methods.

Addition and subtraction of decimals.

Easy conversions of decimal fractions into vulgar fractions and *vice versa*.

Multiplication and division of decimals by whole numbers up to twelve, and by multiples of 10.

Metres, Centimetres, and Millimetres.

*Easy Percentages.

*Easy Averages.

*The drawing of simple scale plans.

*The use of squared paper.

*The construction of charts.

*Easy Graphs.

*Square measure and cubic measure, and the simple mensuration of rectangles and cuboids.

*The use of the ruler, set square, protractor, and compasses.

The drawing of simple geometrical designs.

Simple geometrical terminology.

The construction of parallels, right angles, rectangles, and circles.

The construction of triangles from given data.

The bisection of lines, angles, and arcs.

*The practical demonstration of the early theorems.

*The construction of easy formulæ.

*Simple equations, as "missing number" problems.

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* *Vide* Para 13.

APPENDIX A.

METHODS.

The following suggestions as to Methods are quoted from the comments of members of the Sub-Committee.

" 'Thorough mastery' includes two aspects. Children must be mechanically perfect in all the tables which they learn, and in the addition and subtraction, and the composition and decomposition, of numbers up to 10, 50, or 100, or wherever they get to, but this in itself is not enough. They must be given sufficient practical work to familiarise them with the actual values and proportions of the various quantities with which they deal. By practical work, of course, I do not mean only sums, but practical measurement with different units, from millimetres to furlongs, and work with such apparatus as cubical blocks, sets of brass weights, pint pots, gallon and four gallon tins, and so on. I believe it is only in teaching children to visualise numbers, weights, and measures, and their various proportions, that they will ever learn to enjoy Mathematics or to be any good at the subject. I believe this practical work is absolutely essential for the teaching of decimals ; at present, there is no doubt at all that most children, and I think many teachers too, are afraid of decimals, and have no understanding of approximation. For this reason, I think that the practical use of the metre scale should be brought in quite early."

"It is very much better to do many short sums rather than a few long and cumbersome ones".

"As regards methods of teaching, I am, generally speaking, strongly in favour of those advocated by Ballard in his book 'Teaching the Essentials of Arithmetic', *e.g.*, subtraction by the method of 'equal additions' and the abolition of 'standard form' in decimals".

"The work (in square and cubic measure) should be essentially practical, squares of wood and cardboard being built up into bigger squares and rectangles. Small cubical blocks may also be used. Such squares and cubes should, for preference, have sides of 1", $\frac{1}{2}$", or 1 cm".

"From the beginning children should be taught multiplication tarting from the left hand digit".

The emphasis that has been placed, in recent years on 'practical examples', 'everyday problems' and the like, in the teaching of Arithmetic has led perhaps to the too exclusive use of small numbers, with the result that children show themselves to be startingly unsafe in their use of large numbers. Ballard records that only 62% of children in standard V (in England) can take one from ten thousand accurately, and that only 66% can write in figures, correctly, ten thousand and ten. Teachers would do well to remember that, throughout the Primary School, constant practice in notation (*e.g.*, the *dictation* of numbers of various dimensions for addition or subtraction) is necessary.

APPENDIX B.

Bibliography.

In Appendix A certain isolated comments as to teaching methods in Arithmetic are reproduced. A member of the Sub-Committee has suggested the addition to the foregoing Note of a Bibliography on the subject so that teachers may know where to look for further guidance and keep themselves in touch with authoritative opinion.

The following is a short list of books on the teaching of Arithmetic :—

(*a*) *Teaching the Essentials of Arithmetic*...Ballard... (University of London Press).

(*b*) *The Groundwork of Arithmetic*...Punnett...(Longmans).

(*c*) *Craftsmanship in the Teaching of Elementary Mathematics*...Westaway...(Blackie).

(*d*) *The Psychology and Teaching of Arithmetic*...Wheat... (Heath) (The last named is a new, comprehensive, and thought-provoking work).

(*e*) *The Teaching of Arithmetic in Schools*...Report prepared for the Mathematical Association (Bell).

For the teaching of Algebra at this stage, the second Section of the *Mathematical Association's Report on the teaching of Algebra in Schools* (Bell) should be read. Durell's *A New School Algebra* (see also the same author's *Teaching of Elementary Algebra*) adopts the method of approach suggested in the Note.

APPENDIX C.

A TEST IN MECHANICAL ARITHMETIC.

Ballard's Mechanical Arithmetic Test (in the slightly modified form given on pages 15 and 16) was worked by nearly 1900 children in standards II-VIII in 15 European schools in a representative centre of Anglo-Indian and European Education. The schools participating included boys' and girls' schools, High, Middle and Primary schools, and orphanages. All the children were given the whole Test with instructions to do as many sums as they could in the allotted time (50 minutes). For each of the 100 items of the Test, the number of correct answers was expressed as a percentage of the number of children attempting the sum. These percentages have been plotted on the accompanying graph, the horizontal scale representing the items of the Test Nos. 1-100. The graph shows at a glance therefore the comparative difficulty of the items for this particular group of examinees. The 'median' percentage of success was 67 (indicated by a black horizontal line in the diagram). The limits of probable deviation from this median (*i. e.*, the limits within which half the percentages on either side of the median line fall) are 78 and 58. These limits are shown by dotted lines in the diagram. The 'peaks' lying above and below these limits show abnormal success and failure. For the present purpose it will be sufficient to draw attention briefly to the implications of some of the most prominent 'peaks'.

The most striking feature of the lower part of the diagram is the *group* of 'low' points between H and J. Reference to the Test will show that these items (Nos. 57-63) all involve either *the multiplication or division of decimals.* No other group of sums in the whole course covered showssuch consistent weakness.

The main decimal group is covered by items 52 to 63. Of the addition and subtraction sums (Nos. 52-56) the worst performances are at items 52 and 56 (points F and G). These items alone in this sub-group involve two terms, one of which has one decimal place and the other two. In the relative failure in items 52 and 56 as compared with items 53, 54 and 55 this point may be significant.

It should be noted also that one of the two questions on the decimalisation of money was badly done (Point L—item 82).

These figures leave no doubt as to the fact of the general weakness in decimal work, more especially in regard to multiplication and division. (*cf.* Appendix A).

The mensuration group too, (Nos. 95-100) gave, on the whole, poor results (See the *group* of points N—O). These last few examples may have been hastily worked, and careless errors may have been due to pressure of time. The items on the circle were all done badly. Either the formulæ for the area and circumference were not known, or confused one with the other, or 'diameter' was confused with 'radius'. The low percentage for item 98 suggests the need for the practical handling of a cube. Item 100 poses a question in the converse of its usual form and proved a stumbling block for many.

Some of the isolated 'low' peaks give indications of weaknesses and common misunderstandings which may not perhaps be always recognised. The serious failure at item 5 (the point marked A) in a group of the easiest sums, which, with this exception, recorded the highest percentages of success, is unexpected but important. The sum was as follows :—

$$8+9-3+2$$

and a large majority of the children gave the answer as 12 instead of 16. It is clear that many allowed themselves to be misled by the symmetrical arrangement of the signs and treated $3+2$ as a bracketed term.

The failures at items 38 and 45 (points C and D) seem to be due to a misunderstanding of an associated type.

The answer to item 38 ($1\frac{3}{4}-\frac{1}{2}+\frac{1}{4}$) was most frequently given as 1 instead of $1\frac{1}{2}$. Here it seems possible that the simple fractions were 'associated' because of their similar form (in contrast with that of mixed number) and treated, as in the foregoing example, as a bracketed term.

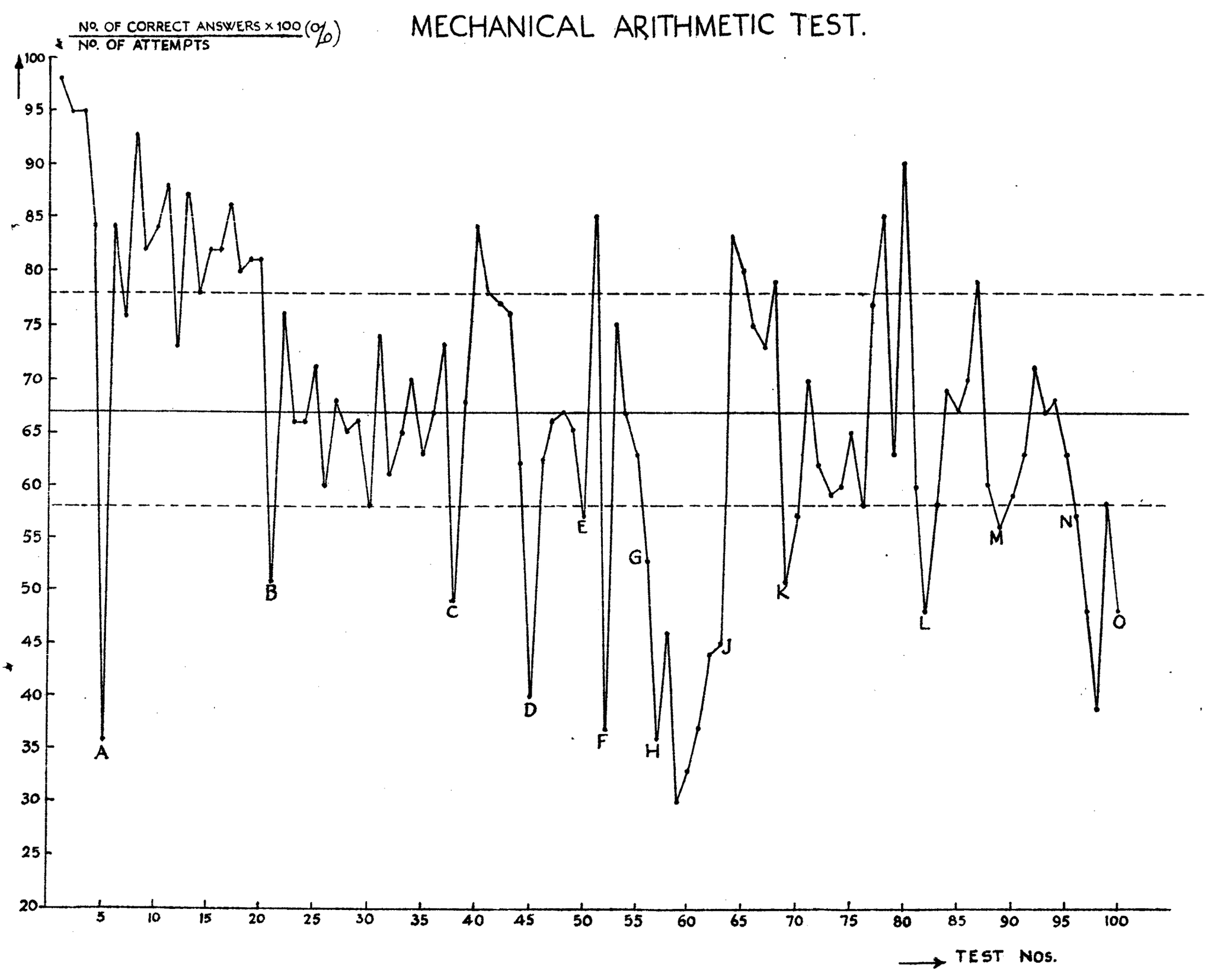
The wrong answers to item 45 (Rs. 0/15/0—Rs. $0/7/0\times2$) usually gave one rupee instead of one anna; and this can only be interpreted, again, as the result of grouping the 'like' terms, *i. e.*, the money quantities, together before multiplication.

The very bad performance in these three dissimilar items is probably attributable in each case, therefore, to the 'suggestive' grouping of the terms. Many children whose grasp of the fundamentals was weak seem to have allowed themselves to be misled by this grouping. If this is so, it is possible that this cause of error, perhaps unrecognised by many teachers, may, in these and other aspects, be responsible for many wrong answers at present ascribed to 'carelessness'. These results at any rate compel the conclusion that this type of error is, probably, much more widespread than has been suspected, and it is worth further investigation by teachers.

The low peak B (item 21) shows that the 0 times table is often ignored (*cf.* Ballard's *Teaching the Essentials of Arithmetic*, Chapter xi).

The high 'peaks' represent, in general (apart from the easy questions on the four rules at the beginning of the Test) those items of each type-group (*e. g.*, fractions, reductions, square root, proportion) which are cast in the easiest and most familiar form. This is itself not without significance.

Only these most striking features of the results are discussed here. It must be remembered that the number of examinees was comparatively few, and that they were located in one town. These limitations should be remembered in reading the above suggestions. At the same time, in view of the definiteness of the indications of the results, and the representative nature of the schools examined, the tentative conclusions reached may well be worth attention and further confirmation over a wider field.


MECHANICAL ARITHMETIC TEST.
No. OF CORRECT ANSWERS × 100 (%)
No. OF ATTEMPTS
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
A
B
C
D
E
F
G
H
J
K
L
M
N
O
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
TEST NOS.

73. 100 per cent of 100
74. 200 per cent of 100
75. 3 lb 4 oz at 1s a lb
76. 4 yd 1 ft at 2s 6d a yd
77. 32 oranges at 8 for 5d
78. 100 oranges at 5 for 1s
79. £ 3-12s-6d $\times \frac{2}{3}$
80. Reduce $\frac{21}{35}$ to lowest terms
81. Find the value of £ ·375
82. What decimal of £ 1 is 13s 4d
83. G.C.M. or H.C.F. of 32, 16, 56
84. G.C.M. or H.C.F. of 12, 20, 28, 32
85. L.C.M. of 1,2,3,4,5
86. L.C.M. of 7,8, and 112
87. L.C.M. of 3,5,9,15
88. Average of 5,17,17,19
89. Average of $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$
90. Average of ·5, ·01, 1·2, ·57
91. 4 : 7 : : 6 : x
92. 3 : x : : 5 : 10
93. x : 8 : : 3 : 12
94. 8 : 7 : : x : 21
95. Area of plot $2\frac{1}{2}$ yd. sq.
96. Circum. of circle 4 ft in diam. ($\pi = \frac{22}{7}$)
97. Area of circle 4 ft in diam.
98. Area of all the faces of a cube of 2 inch edge
99. Volume of water in a tank 2 ft long, 2 ft wide $1\frac{1}{2}$ ft deep
100. Find the radius of circle with area of 154 sq. ft.

Latifi Press, Delh

MECHANICAL ARITHMETIC TEST.

(Fifty minutes).

Work in your head if possible. Scrap paper allowed.

1. $8+5$
2. $9+6+8$
3. $8+7+13$
4. $34-19$
5. $8+9-3+2$
6. $17+18-14$
7. $3{,}000-1$
8. $156-156$
9. $200-13$
10. $54+368+7$
11. $100-4-96$
12. $201-102$
13. 47×8
14. $63\times5\div9$
15. 587×7
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INTER-PROVINCIAL BOARD FOR ANGLO-INDIAN & EUROPEAN EDUCATION.

The Teaching of Music in European Schools.

The teaching of music in schools in England has made great strides during the past twenty or thirty years. This advance is due mainly to a new conception of the aims of music teaching which may now be said to be directed not so much towards the acquirement of any vocal or instrumental skill as towards the cultivation of musical instincts and of a sound musical taste. In a word, the present aim may be said to be the teaching of musicianship.

Music has acquired a new importance in schools by the realisation that, rightly taught, it can react on the whole life of the child ; for it can provide opportunities for rhythmic bodily activity, for the co-ordination of the senses, for the corporate and controlled expression of emotions, and for the discipline of the mind. Above all, the sympathetic performance of choral works and intelligent listening to good music provide a spiritual experience whose effects cannot be measured.

Formerly, music in schools was confined mainly to the learning by ear of a few songs, often of little artistic merit. Now, in order to develop a more intimate understanding of music, other senses are called into play. The voice is trained to sing what is heard; but, in addition to this, the ear is trained to hear, and the voice to sing, what is seen, and the body to express what is heard. A most valuable approach to the appreciation of the form and the mood of music has been found in rhythmic movement which finds its more advanced developments in the Eurhythmics of Dalcroze, but which, in simpler forms, is being increasingly used to introduce musical ideas to the youngest children; and with the training of the voice, the ear, and the eye, as instruments for the apprehension of the language of music, goes the formation of a taste for fine melody and beautiful sounds through singing well-written songs and listening to what is best in musical literature.

II

Anglo-Indian and European children in India are at a disadvantage in that their opportunities for hearing good music are, by comparison with English standards, very meagre indeed. Generally speaking, only in the three Presidency towns is there any opportunity for hearing good orchestral and choral performances. Broadcasting, such an all-pervasive influence in England, is at present a negligible factor in the musical education of Anglo-Indian and European children in India. The volume of good European music broadcast is very small, and most of what there is, is given late at night. On the other hand, there is music of another kind everywhere. Outside the schools, a very large proportion of the music heard by Anglo-Indians and Europeans is modern Dance (Jazz) music. To many, this, and this only, is music; there is none other. With many more, anything but this is spoken of, sometimes in awe, sometimes with superciliousness, as 'classical'. Gramophone dealers sell little else; and at the Cinema, before and after the projection of pictures, there is no other music but this.

The responsibility of the schools is therefore a heavy one; for in most cases it is only there that children will have the opportunity of hearing music of good quality, only there that the pernicious influence of a musical fare consisting almost entirely of the harmonic clichés, the sinuous melodic line, and the monotonous rhythms of Jazz music can be counteracted, only there that it is possible to develop that healthy musical taste which will inevitably react favourably on artistic taste in other directions.

III

Class singing has been and must remain the mainstay of the music course. The cultivation of musicianship is the objective, but singing is the most convenient means to this end; and around this nucleus the course can be extended so as to include that training of the ear and the eye which provides a key to the world of music.

For singing lessons, a reasonably good piano, regularly tuned and otherwise put in order, is of primary importance. The effect on the children's ears of singing to a piano which is harsh in tone or out of tune or both is disastrous.

Equally important is the choice of songs. Three criteria may be applied :—

(1) The music must be of some artistic merit.

(2) The words must be worth singing.

(3) The standard of both music and words must be suitable to the age of the pupils.

One of the aims of teaching class singing is to give the children as wide a repertoire as possible of songs of good quality, so that they may develop a sound melodic taste and appreciate the beauty than comes from matching fine music with fine words. In the Kindergarten classes, nursery rhymes and the simplest folk songs are most suitable. It is well to realise that some music specially written for very small children on a mistaken estimate of their musical capacity is trivial and worthless. In the primary classes Folk Songs, National Songs, and Sea Shanties, will form the bulk of the repertoire, but there should be introduced for children from the age of ten some of the modern unison songs by contemporary British composers of which many excellent examples are available. In the higher classes suitable classical arias (*e.g.*, those of Handel) may be added to the selection.

Songs with words of an artificial sentiment should be avoided and slow 'chromatic' tunes should always be regarded with suspicion. It seems necessary to add that songs of Irish or Welsh origin are not necessarily of merit. The collections of National Airs given in the Appendix are a safe guide.

It is well for the singing in unison to be brought to a satisfactory level before two-part singing is attempted. Part-singing can be introduced into the lower classes by means of rounds and descants. In the selection of two-part songs care should be taken to avoid those songs in which the second part lies exclusively in the lower extreme ranges of the voice. The ideal part-song for school use is one which is written for equal voices. In any case it is desirable to allow all sections of a class to sing the lower or 'second' part in turn ; otherwise there will be tendency for the lower part to be given only to those more musical children who can, irrespective of the range of their voices, be relied upon to 'hold' this part, to the detriment of the musical education of the rest of the class.

It is important that there should be a plentiful supply of sheet music available so that every child can have at least the

voice part of a song. The voice parts of several of the best collections of school songs are published separately. It is necessary to remind teachers that the reproduction of printed music by copying it on the black-board or by any other means is an infringement of the Copyright Law.

IV

To interpret the mood of a song, to reflect its character, this is the chief justification for singing. A certain knowledge of the proper use of the voice is necessary, but not for its own sake. Technique is merely a means to an end, namely, the capacity to interpret a song with the maximum of expressiveness. For this reason therefore, every singing lesson should include a certain amount of voice training. The first five minutes of the lesson are all that is required for this purpose.

Each singing lesson should begin with breathing exercises—in through the nose—out through the mouth. Small children might be asked to 'smell a rose' and 'to blow out a candle'. There should also be practice in taking quick 'gasp' breaths through the mouth as these are sometimes required in a quick song. The class should stand when actually doing singing and breathing exercises.

The main point in the production of a good tone is the development of the head voice. Many children at first tend to use the chest voice (mass repetition of tables, poetry *etc.*, encourages this and should be used sparingly). The head voice is best produced and extended by the singing of downward passages. A wide range of suitable exercises will be found in the books referred to in the Appendix to this Note. Teachers will probably prefer to cull examples from several of these books rather than to use one exclusively.

Exercises should be of such a standard that they can be readily memorised. The age of the pupils will therefore determine the difficulty of the exercises chosen. *They should have melodic interest and always be rhythmical.* If possible, all exercises should be conducted. The actual exercise should not be played on the piano but suitable accompanying chords add to the interest, maintain the pitch, and help to cultivate the children's harmonic sense.

The exercises can be made more interesting and useful by introducing *crescendo* and *diminuendo* effects, but in any

case there should be much *piano* singing. Young children's voices are rarely beautiful and they will be less harsh if used gently. But another good reason for a great deal of soft singing is that it enables the children to hear better the sounds they are making, and it is constant and careful *listening* to onesself and to others that is the main corrective to singing that is harsh or out of tune.

Humming is excellent for the production of a forward resonant tone; it is a good plan to start the exercises on m- oo, m- oo . . . changing from the humming sound to the vowel on every note. Other vowels should be used in turn thus: o, i, ay, ee. The preliminary hum can be dropped when the voice is well forward.

Young children have little difficulty in singing notes as high as A′ or B′ if their voices are being used properly; but it is well to remember that adolescents, girls as well as boys, find increasing difficulty with these notes; and with children of this age, care should be taken to avoid songs which range to the extremes of the voice.

V

The treatment of the words of a song is a matter of paramount importance if really expressive singing is to be secured. Care should be taken that all words are clearly enunciated, and purity of vowel sounds must be insisted upon. There is but one standard to be aimed at in singing words, namely, that they should have the same purity, clarity, and significance, as in speech. 'Significance' is important. It means the placing of the appropriate emphasis on certain words of a phrase. We do not say

That all her swains commend her

giving equal stress to each syllable. In speaking this line we give the greatest stress to the word 'all' and the last syllable of the word 'commend', less to 'swains', and less still to the remaining words. So it must be sung.

VI

Finally, all songs must be sung with a good rhythm. This applies to slow as well as to quick songs and means more than can be defined in a few words. It implies, at least, good phrasing, a proper *spacing* of accents, a vocal line—vigorous or smooth or light—appropriate to the mood of the song, and the

right *tempo*. If children can be taught to feel the 'pulse' of a song, they will enjoy it and sing it the better.

The singing lesson can be used in several ways as a training in general musicianship, for the children will develop a true and sensitive ear, a liking for good melody, and an understanding of the simpler notions of musical form *e. g.*, the shape of tunes.

VII

'Appreciation' is a term in current use which often bears too narrow a connotation. It means more than the mere listening with appropriate, and sometimes inappropriate, explanations to music. It implies an intelligent response to all that music conveys, not passive 'liking', which remains a matter of superficial impressions, but understanding apprehension.

It has been already mentioned that this intelligent response to music can best be developed at the earliest stages by the aid of bodily movements. The very first lessons in 'appreciation' may perhaps be on the following lines. The children will be told to run and skip about when bright jolly music is going on, when rumbling 'growly' music ("thunder") is played they will cease from their running and take shelter, to emerge and run about again when the music resumes its happy character; and when it becomes slow and soft they will sink to the floor as if to sleep.

Their attention will be drawn to loud and soft sounds, high and low sounds, and, in due course, increasing and decreasing sounds (*e.g.*, an approaching train, a receding car). The development of their musical memory will begin when they are asked to recall (vocally) sounds they have heard outside the school, (*e.g.*, street cries, a cock crowing, *etc.*). These are but a few instances of the beginnings of musical instruction for the 'aged fives'.

Later, the power to distinguish long and short notes and different rhythms will be developed by bodily movements. Children should learn to clap and step 'crotchets' and, in due course, a mixture of minims and crotchets, or crotchets and quavers. They can learn to run to quaver movement, to step to crotchets, and to 'slow march' to minims, and, later, to change from a running to a skipping step when 4/4 time changes to 6/8 time.

The French time names (taa, taa-tai, *etc.*,) should be introduced at this stage and the children taught to 'name' a rhythm clapped or tapped or played on the piano by the teacher.

The next stage will be to write down in some form of symbolic shorthand, *e.g.*, | ⌐| | | (taa, taa-tai, taa, taa) rhythmic phrases clapped or played; and in time the children should be able to clap and then write down the rhythms of easy known songs in this way.

VIII

In many schools percussion bands have been started and these are excellent aids to rhythmic training. In connection with these bands the time names and the power to read individual scores in some form of time notation should be taught.

The purely musical aspect of percussion band performances should always be given its proper importance. It is hardly necessary to say that no music that is not good of its kind should be played, and that on no account should the class degenerate into an infantile jazz band. Some excellent arrangements for percussion bands will be found in the books on this subject given in the Appendix.

It is important to remember that the percussion instruments are accompanying the piano. The piano should be well played and the percussion instruments never allowed to create a welter of noise in which the music is drowned. Their function is to provide accent, emphasis, and colour, for the music from the piano. All percussion bands should hear Haydn's Toy Symphony on the gramophone so as to understand the proper function of toy instruments.

If children are to conduct the band, they should be taught to use recognised methods and to keep their forces under control, including the pianist. It is obviously undesirable to allow one child to monopolise the conductor's desk.

IX

Movement can be used not only to develop the understanding of musical rhythm but also the elements of melodic form. If children, for example, are dancing in a circle to a given tune, they may be asked to listen for the 'halfway' stage (imperfect cadence) and at that point to reverse the direction of their dance. With practice, the 'halfway rest' and the

return 'home' in a melody will easily be distinguished, and later the four distinct sections of, say, hymn tunes will be recognised. These may be danced or stepped in a circle thus :— For the first quarter of the tune the children, holding hands, dance in one direction and for the second quarter, in the reverse direction ; for the third quarter the children join hands in pairs and dance round together 'on the spot', and again, but in the reverse direction, on the fourth quarter of the tune.

Changes of key can be similarly illustrated by sectional movements of a class, one section moving for the music in one key, another moving when a change comes. The inventive teacher will be able to devise suitable movements to illustrate simple Binary and Ternary forms, tunes of the A A B A type and so on. With the older children, the actual *shape* of the melody can be emphasised and the position of the climaxes shown.

X

While this rhythmic work is going on, the children should be introduced to the tonic solfa names of the notes and be taught to repeat, using the solfa names, short phrases sung or played by the teacher. The modulator should be built up in stages, either from the notes of the common chord or by steps, and children should then be taught to sing phrases to the solfa names pointed out on the modulator. These phrases should always be rhythmical and should move only by easy 'singable' steps. When this can be done the time for transition to staff notation has come. The device of using the fingers of the hand as a stave is a useful one. The solfa notes are allotted to the fingers of the hand and the spaces between them, and, later, to the lines and spaces of the stave itself. Using a moveable DOH, the class should then be able to sing tunes from the solfa names placed on the stave. Finally, actual notes should be substituted. For this work a stave with lines about three inches apart, plainly ruled on a blackboard, is essential.

As soon as possible class books for sight reading from the stave should be introduced. These should be carefully graded, for it is of great importance to develop confidence and fluency from the start.

When greater proficiency is obtained, practice in reading simple songs will be undertaken, but, in the main, songs at this stage should be learnt by ear.

XI

The writing down of rhythmic patterns has already been referred to. It has been found that the actual writing of notes and phrases from dictation both in tonic solfa and staff notation is a valuable aid to the understanding of these notations. At first the phrases played or sung by the teacher will be very short, *e.g.*, **m.f.m**; **d.r.m.d.** Only when most of the class can write such phrases down should longer phrases be given. Similarly, at the appropriate stage, the children should be taught to write short phrases on the stave. Later, time and rhythm can be combined. The steps will be as follows :—First, after the teacher plays a phrase, the children should be asked to write down the rhythm, then the phrase in solfa, next the solfa names on the stave, and finally, the actual notes on the stave with their proper time values.

Many Music teachers will have read of the remarkable success of Sir Walford Davies in getting school children to write original melodies and will wish to attempt this with their own classes. The essentials are, (1) early and thorough training in melodic form by rhythmic movements in the manner outlined above, (2) training in vocal extemporisation of 'question and answer' phrases, (3) a knowledge of phrase endings (cadences), and (4) early facility in writing down correctly, both as to pitch and time, first what is played or sung, and finally what the child invents and hears in his mind, without actual vocalisation.

XII

The proper training of the ear and the eye has been called the key to the world of music. Once the door is open a reliable guide book is necessary; and it is in the introduction to selections from the works of the great musicians that a valuable part of a good music course lies. It is as important to develop in school a discrimining taste and liking for good music as for good literature.

The paucity of good musical performances in India has already been referred to; but the gramophone is by no means a negligible substitute. For young children the selections played should not be too long. The span of concentration of young children is short, and when interest evaporates the music will lose its value. Generally speaking, music with a well-marked rhythm should be preferred. Records of varying types should be used, and vocal, instrumental, and orchestral

performances included. There should be no attempt to read into any music a meaning which the composer never intended it to bear. It is wrong to burden music with literary associations, and such a treatment interferes with the formation of a habit of listening to music *qua* music. Comments on music played should be sparingly made. A word as to the purpose of the composition (*e.g.*, a dance) and, except for the youngest children, about the composer and his period, and the instrument or instruments used, is sufficient. But for older children it is a good plan to have a central purpose in view when playing a series of records. The instruments of the orchestra, one of the great composers, dance forms (*e.g.*, Suites of Bach and Handel, Chopin's Valses and Mazurkas,) Ballet music, *etc.*, are all themes which might be used as a thread on which to hang a term's course of 'listening'.

In the higher classes, the gramophone can be used to illustrate talks on the History of Music. (Any student of the Tudor and Elizabethan periods ought to know of the remarkable efflorescence of music and poetry that occurred at that time).

It is suggested that during Needlework lessons records of good music might be played, entirely without explanation, although it is a good thing to guage the children's interest from time to time by inviting their comments. This would form a most valuable alternative to the reading of stories aloud which often takes place during the needlework lesson.

It is a good rule that no Jazz music should be heard in school at any time except as an actual accompaniment to dancing. When it is turned on from a wireless set or a gramophone to listen to, to croon to, or as a background to some quite independent activity, its effect on the hearers is insidious and disastrous.

XIII

A word may be added on the subject of Inter-School Singing Competitions or Festivals. It is certain that, in places where there are groups of schools, nothing is more conducive to a high standard of singing than the organisation of annual festivals at which the school classes sing in each other's presence and receive expert adjudication. Such festivals are held (or have been held) in two or three centres in India, with most valuable results. Test pieces have to be

learnt and a sight singing test is included. In one centre, the visiting examiner of the Royal Schools of Music acts as adjudicator and the general level of singing and of sight reading in the schools of this particular place has risen markedly during the past few years; and the spirit of the children on the occasion leaves no doubt as to their enjoyment of the event.

Certain objections have been raised to these competitive festivals. It is contended by some that the preparation involved interferes with the routine school work. For this the festival can hardly be blamed. The preparation of the set pieces and the training in sight reading should form part of the normal music course; and it will be an unwise teacher who concentrates her attention on the prescribed songs to the exclusion of all others for a long period before the festival. Unless this preparation can be taken 'in her stride', the teacher's work is faultily planned.

It is further objected that there is too much competition in school life already and that any further competitive events are unhealthy. This is, of course, a matter of opinion; and it need only be said that the advantages of hearing other choirs' efforts, of gaining fresh ideas as to the possibilities of good tone and fine interpretation, and of singing (as is done in many of the best festivals) under expert direction in a massed choir, far outweigh the possible disadvantages of the competitive element. Dr. Walford Davies, a pioneer of the Festival movement, speaks of competitors 'pacing each other along the road to excellence', and it is in this spirit that schools should participate.

Non-competitive festivals are, however, gaining popularity in England, and these include most of the advantages and none of the disadvantages of the competitive festival. Each school participating prepares six or more songs during the year. On the day of the festival, the musical director selects from the list two songs for each school to sing. He gives a short talk to all schools on their performances, and later conducts the combined choirs in a performance of one or two of the songs all have learnt. This sort of festival does not deter the weaker choirs from entering and all have the inspiriting experience of massed singing.

It is to be hoped that in more centres such festivals, either competitive or non-competitive, will be organised.

XIV

The more adventurous teachers will be interested in the books on Pipe Making and Playing mentioned in the Bibliography. This is one of the most recent of school musical activities and has been found to be valuable and interesting to the children. It offers scope not only for rhythmic and aural training and sight reading, but also for manual skill and simple instruction in the elements of acoustics. The materials for pipe making are cheap and readily obtained, and the delight of a child in being able to make its own 'workable' instrument is something which may be turned to good account especially with those who are less successful in literary studies. Pipes of various pitches can be made and concerted work can be undertaken. A pipe and a percussion band in cooperation could do most interesting and useful work together.

XV

A few schools in India have an orchestra and others a brass band. The latter is the less valuable. The instruments do not lend themselves to accurate tuning, especially in extreme climatic conditions, the tone is usually blatant and monotonous, and the music produced by unskilled players, almost entirely devoid of expression. Given competent instruction, a string orchestra is capable of giving far more pleasing results; and if wood wind (especially clarinet and flute) can be added,—and boys quickly acquire reasonable proficiency in these instruments,—a great deal of excellent music can be played. There are now available for school orchestras, a large amount of music tastefully written and carefully graded, and also many excellent and simple arrangements from the classics.

XVI

It is obvious that if all the various branches of musical instruction mentioned above are to be undertaken in schools a good deal of time must be allotted to the subject. At the same time it must be emphasized that class singing, rhythmic movement, aural culture, sight singing, and 'appreciation', are not separate studies but are interconnected, each reinforcing the other in the building up of musical culture. It is suggested that in the Kindergarten there should be a daily period set apart for musical and rhythmic work; and in the Primary classes three, and in the upper classes two, periods are a desirable minimum

The following analysis for two 40-minute periods weekly is suggested. Teachers who are fortunate enough to have more time than this will be able to make the necessary modifications :—

1st Period.	Breathing exercises and voice training	5	minutes
	Singing known songs with special attention to interpretation ...	10	„
	Learning new songs ...	15	„
	Listening to gramophone records or the teacher's playing ...	10	„
		40	
2nd Period.	Breathing exercises and voice training	5	„
	Singing known songs with special attention to interpretation ...	10	„
	Sight singing ...	8	„
	Aural training ...	7	„
	Musical dictation ...	10	„
		40	

(*N.B.*—It will be noticed that no mention has been made of instruction in what is sometimes called 'Theory', *i.e.*, time and key signatures, clefs, etc. These things should be taught as the necessity for them arises and on no account should a whole lesson be devoted to them.)

XVII

The above brief review of the many forms of activities which are now being included in school music courses will suggest the need for a music specialist, (and one whose musical skill is not confined to playing the piano), in every school, whether Primary or of a higher grade. If the subject is given the status in the school curriculum to which it is entitled, a fully qualified music teacher is indeed essential. It is suggested, however, that all teachers trained for Junior school work, except those few who have no ear at all, should, even if they have no pianistic skill, be acquainted with the methods of modern musical instruction for young children, as few schools will be unable to provide a pianist who can work with a teacher capable of using her voice musically and of teaching the elements of aural culture and general musicianship. In any case, it is hoped that the observations on class singing and the associated parts of the subject will be helpful to those who do not feel competent to embark upon the full course outlined in this Note.

(*N.B.*—Detailed courses and a great deal of information as to teaching methods will be found in the books given in the Bibliography in the Appendix to this Note.)

APPENDIX.

Bibliography.

Serial No.	Title of Work.	Author.	Publishers.
	General.		
1.	Handbook of Suggestions for Teachers	Board of Education	H. M. Stationery Office
2.	Recent Development in School Music	Board of Education Educational Pamphlet No. 95	
3.	Music in Schools (This valuable book not only gives detailed courses and methods, but provides a most comprehensive bibliography on all branches of musical instruction in schools, and lists of song volumes and other music and of gramophone records. It is a book of reference which no school should be without. The names which follow are merely selections from the bibliography given in this publication).	A syllabus of Music Teaching prepared by a committee appointed by the Middlesex Education Committee	Oxford University Press
	Appreciation of Music.		
4.	Appreciation of Music	F. Howes	Longmans
5.	The First Book of the Great Musicians	P. A. Scholes	Oxford University Press
6.	The Second Book of the Great Musicians	,,	
7.	The Third Book of the Great Musicians	,,	
8.	Music for Children	M. Storr	Sidgwick and Jackson
9.	Hidden Tunes	Geoffrey Shaw	Nelson
10.	Instruments of the Orchestra	J. E. Borland	Novello
	Aural Culture.		
11.	Aural Culture based upon Musical Appreciation	Macpherson and Read	Joseph Williams

Serial No.	Title of Work.	Author.	Publishers.
12.	Ear Training	Mabel Chamberlain	Novello
13.	Eye Training in Music		"
14.	The Compleat Teacher	A. Somervell	Boosey & Co.
	History of Music.		
15.	Music and its Story	R. T. White	Cambridge University Press
16.	The Growth of Music	H. C. Colles	Oxford University Press
17.	A Miniature History of Music	P. A. Scholes	
	Melody Making.		
18.	Twelve Books on Melody	Sir Walford Davies	Gramophone Co.
	Percussion Band.		
19.	Complete Guide to Percussion Bands	Louie de Rusette	De Rusette Centre
20.	Nursery Rhyme Band Book		Curwen
21.	Rhythmic Training in the Percussion Band Class	Marjorie Greenfield	Pitman & Sons
22.	Percussion Band Series	Alys Garnett	Boosey and Hawkes
	Rhythmic Work.		
23.	The Child's Training in Rhythm	Sylvia Currey	Joseph Williams
24.	First Lessons in Rhythmic Gymnastics	T. Keighley	Curwen
25.	First Lessons in Rhythmic Movement	W. Houghton	London School of Dalcroze Eurythmics
26.	Musical Examples for Rhythmic Exercises	Dr. R. T. White	A. Weekes & Co.
	Sight Reading.		
27.	Music Practice	Nelson	Nelson

Serial No.	Title of Work.	Author.	Publishers.
28.	Graduated Exercises on the Movable Doh	McNaught	Novello
29.	Sight-singing Studies	,,	,,
30.	Rapid Sight Readers	Arthur Somervell	Boosey and Hawkes
31.	Eyes Right. A Supplementary Junior Pupil's Book	Nelson	Nelson
32.	Graded Catches and Rounds		Curwen
	Song Books.		
33.	A Selection of Collected Folk Songs	Cecil Sharp and R. Vaughan Williams	Novello
34.	Songs of the British Islands	W. H. Hadow	Curwen
35.	The Shanty Book	R. R. Terry	,,
36.	Classical Songs	Shaw	,,
37.	Our National Songs	H. Boulton and A. Somervell	Cramer
38.	A Golden Treasury of Songs	,,	Boosey
39.	Songs of the Hebrides	Kennedy-Fraser	,,
40.	Clarendon Song Books	Whittaker, Wiseman and Wishart	Oxford University Press
41.	Oxford Song Book	Percy Buck	,,
42.	Songs with Descants	Forster & Finlay	McDougall
43.	Ten Descants to National Songs	,,	,,
44.	Nursery Rhymes of London Town	Eleanor Farjeon	Oxford University Press
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45.	The Training of Children's Voices	Walter Carroll	Forsyth
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